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was confirmed in his father's kingdom by a decree of the Roman senate (1).

I thought it proper to take notice of this inscription, not only as it seems to clear up the succession of the *Bithynian* kings; but likewise as it contains the name of a third president of the college in *Delos*, and shews the regard that was paid to it by the princes of different countries in *Asia*.

J. W.

XVII. *A Letter from Mr. Henry Baker F. R. S. to the President, containing Abstracts of several Observations of Auroræ Boreales lately seen.*

S I R,

Read June 28,  
1750.

ON Monday the 23d of January last, some unusual Appearances were observed in the Sky, at *London*, and the Towns about it,

(1) *Vaillant* has given us the impression of an head upon a silver tetradrachm, with this title placed over it, *Nicomedes Epiphanes rex Nicomediae*; whom he takes to have been the grandfather of *Prusias*: *Achemened. imp. Tom. II. p. 304.* And *Dr. Mead* has such a coin in his collection with these words on the reverse, ΒΑΣΙΛΕΩΣ ΕΠΙΦΑΝΟΥΣ ΝΙΚΟΜΗΔΕΩΣ. Where *Epiphanis* the cognomen stands first, as it sometimes does in ancient writers: *Cic. Orat. c. 27.* An impression also of a similar coin, with the head on one side, and the same legend on the other, may be seen among the *Numismata Pembrokech. Par. II. tab. 69.* But *Vaillant* says, that he had not met with any coin, which had on it the head of *Nicomedes Epiphanes* the son of *Prusias*, to whom the inscription refers, which is cut on the stone. *Ubi supra, pag. 355.*

it, by Thousands of People during the whole Evening, of which some Accounts were laid before the *Royal Society*: And as Appearances of the like kind were observed in the Heavens, the same Evening, at great Distances from *London*, I take the Liberty to present you a Description of what was seen at the City of *Norwich*, by Mr. *William Arderon* F. R. S.; and also of what was observed at *Wells* (a little Sea-Port Town in the same County of *Norfolk*, about 30 Miles nearly due North from *Norwich*) by Mr. *Joseph Sparshal*, and sent by him to Mr. *Arderon*, who communicated it to me.

*An Account of the Aurora Borcalis seen at Norwich, Jan. 23, 1750. by Mr. William Arderon.*

THE wonderful Appearances of the *Aurora Borealis* on the 23d of *January* last, have been taken notice of in most Parts of *England*, tho' in different Forms. At *Norwich* I believe it was as extraordinary as at any Place whatever: But the Weather being very cold, and myself somewhat indisposed, I did not make all the Remarks I could have wished: The few I did make are as follow:

This wonderful *Aurora* began at 6 o' Clock in the Evening, with a blackish Cloud in the N. E. out of which sprung up a Streak of scarlet-colour'd Rays, of a surprising Beauty and Vividness. This presently extended to within a few Degrees of the S. W. Horizon, passing directly thro' the *Zenith*, and so continuing near a Quarter of an Hour, when red and yellow Columns began to rise upwards from every Quarter.

At

At 7 o' Clock a black Cloud rose up in the S.E. and quickly put on a semicircular Form, with light yellowish Vapours ascending out of its upper Edge, and representing a Glory of an uncommon Brightness.

At 8 o' Clock the black Cloud was dispersed, but the yellow Glory remained; and round that sprang up another Circle of Red, which made the whole appear very tremendous.

The reddish Streams, as well as this last-mention'd Circle, were sometimes so dense, that even Stars of the first Magnitude could not be seen thro' them.

There was now-and-then some of the flashing *Aurora* in different Parts of the Firmament, tho' not so common as I have observed at other times.

The Night was full as light as it is when the Moon is about eight Days old; but I could compare it neither to the Light of the Sun nor Moon, some of the original Colours seeming to be wanting: And the best Description I can give of it is, to liken it to that Light produced in a dark Room, when one of the seven original Colours is separated from the rest, after they have passed thro' a Prism, and been collected together again by a convex Lens.

This Evening the Barometer was 30.1 falling. *Haukesby's* Thermometer 63. Wind E.  $\frac{2}{10}$  Force. The Morning misty, and very cold, but all the Day clear.

*Part of a Letter from Mr. Joseph Sparshal, of Wells, concerning those Lights in the Heavens, seen Jan. 23, 1749-50. to Mr. William Arderon at Norwich.*

ON Tuesday Jan. 23, the Air at *Wells* was clear and serene during the greatest Part of the Day, with a fresh Breeze of Wind at S. S. E. which terminated in an Evening extremely remarkable for Appearances in the Heavens of an uncommon *Aurora Borealis*.

At 15 Minutes past 5, I first took notice of the Foot of an Arch, which formed an Angle of about ten Degrees with the N. E. Part of the Horizon. This Arch shot out pointed Streams like Pyramids, of a fiery red Colour, which generally ascended within a few Degrees of the *Zenith*, then vanished, and were immediately succeeded by others, from the N. E. where the principal Magazine seemed to be. They continually shifted towards the E. and S. W. with sudden Flashings and Darrings; but towards the West the Appearances seldom altered.

At 30 Minutes past 5, a luminous Stream, of a bright Flame-Colour, shot up on the N. Side of the fiery Arch, which still kept somewhat of that Form, tho' frequently interrupted by shooting Flashes from the N. E.

At 40 Minutes past 5, there appeared suddenly in the N. E. an elliptical *Corona*, of an amazing Brightness, elevated about 9 Degrees above the Horizon, and having its longest Diameter parallel thereto. There shot up perpendicularly from this Streams resembling

sembling Columns of Flame intermixed with others of bright Red.

At 50 Minutes past 5, Part of the Hemisphere, included between the N. E. and S. E. was strongly illuminated, with a vast Number of pointed Rays of Crimson and Flame-colour, darting towards the *Zenith*. These vanishing in about four Minutes, were succeeded by many whitish Streaks, shifting from the N. to the S. E.

At 55 Minutes past 5, there sprang up in the N. three bright Pyramids of Flame-Colour, ascending to the Height of about  $70^{\circ}$ , not perpendicular to the Horizon, but inclining towards the E. and these were joined at the upper Parts by an equal Number of a blood-red Colour from the S. E.

At 6, a Pyramid of a crimson Colour rose from the N. E. to the Height of about  $60^{\circ}$ . This soon disappeared; but a diffused Redness remained; and from the N. E. to the S. W. appeared an Arch, crowned at the *Vertex* with something resembling a Glory, with a round Body of Light in its Centre.

At 20 Minutes past 6, the Redness was contracted into a narrower Compass, but was much deeper in Colour, forming an Arch from S. E. to S. W. and appeared at the *Zenith* like a fiery Sheet spread towards the South; the North being at the same time illuminated with white Streams, like the common *Aurora Borealis*.

At 30 Minutes past 6, a whitish semicircular Arch was formed to the Southward, encompassing the red Lights in the *Zenith*, and extending from the E. to the S. W. But this Appearance continued only a few Moments.

At

At 40 Minutes past 6 the Redness quite disappeared in the N. E. and that to the Southward became much paler. The common *Aurora* appeared very plain in the N. E. till 7 o'Clock, and then totally disappeared.

At 8 the common *Aurora* appeared again very bright from N. to E.

At 30 Minutes past 8 appeared another large semicircular Arch, extending from E. to W. pointed Columns of a bright Red shooting up from each Side of its Base; with other smaller ones on the upper Part of it, such as the common *Aurora*. At the same time arose in the North, from within a very few Degrees of the Horizon, a bright pyramidal Stream of Light, of a surprising Magnitude. This Appearance continued near a Quarter of an Hour very regular, and exceeding beautiful.

At the Beginning of these Lights the Mercury stood at 29.9, but quickly fell to 29.8. The Wind at S. E.  $\frac{7}{15}$  Force.

During Part of the Time I observed an uncommon Motion in the magnetic Needle; but was too closely engaged in observing the Heavens to take much notice of it.

I saw this Evening those Meteors called falling Stars; particularly some, which, on taking Fire, left a long Train of Sparks behind them.

My Situation being quite open to the Sea on all Sides, except the South, afforded me as favourable an Opportunity of viewing the above Particulars as I could wish; and I gave up my whole Attention to them.

Having

Having laid these Accounts before you, permit me the Honour to be,

S I R,

Catharine Street, June 18.  
1750.

Your most obedient  
humble Servant,

H. Baker.

XVIII. *A Description of a Mariner's Compass contrived by Gowin Knight, M.B. F.R.S.*

Read July 5. 1750. **T**HE Discovery of the Mariners Compass has probably been of more general and important Use to human Society, than the Invention of any one Instrument whatsoever: And yet so far have they been from studying the Improvement of it, that there would be no Absurdity in supposing that the first which was made might be as much superior to those in common Use now, as the most improved Instrument we have is superior to its first Contrivance.

The Compass which appeared before this *Society* last Year, on account of its being render'd useless by Lightning \*, was what afforded me the first Idea of their Imperfections, some of which I then enumerated; but others have since occurred to me, arising from the Structure of the Needle, which I had not sufficiently considered at that time. It was then observed, that almost all the Compasses on board our Merchant-

\* See these *Transactions*, N<sup>o</sup>. 492, p. 111.